

Method for Manufacturing Liquid Crystal Display Device

Abstract

The present invention discloses a method for manufacturing liquid crystal display (LCD) device by utilizing photopolymer. A first
5 photopolymer layer is coated on the support substrate and the substrate having a buffer layer is treated by photopolymerization. A substrate is treated by processes for forming an electrode layer, an alignment layer and projections as required by general LCD manufacturing. A second photopolymer layer is coated on the
10 substrate having a plurality electrode patterns, an alignment layer and projections. Mask exposure is applied to the substrate and the photopolymer forms a polymer wall. Alternatively molding can be applied to the substrate along with linear ultra violet exposure. The photopolymer layer is hardened by such
15 process and forms a polymer wall with alignment. The cavities in the polymer wall are filled with mixture of liquid crystal and small amount of photopolymer. The support substrate and the substrate are aligned and treated by mask exposure for coupling the support substrate to the substrate via photopolymerization.
20 The support substrate is separated from the substrate and accordingly a single substrate LCD device is generated. The same method can be applied to manufacturing process for a LCD device without a substrate. The method increases yield rate also

provides a different method for manufacturing a LCD device.